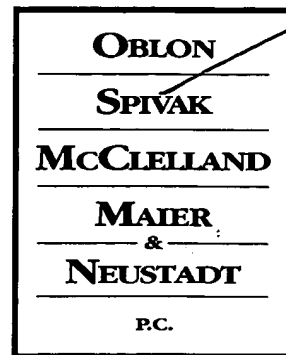




Docket No.: 220757US0PCT

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313



ATTORNEYS AT LAW

RE: Application Serial No.: 10/070,910
Applicants: Florence L'ALLORET
Filing Date: March 13, 2002
For: POLYMER COMPRISING WATER-SOLUBLE
UNITS AND UNITS WITH AN LCST, AND
AQUEOUS COMPOSITION COMPRISING IT
Group Art Unit: 1615
Examiner: BLESSING

SIR:

Attached hereto for filing are the following papers:

APPEAL BRIEF W/APPENDIX 1 & APPENDIX II ATTACHED

Our credit card payment form in the amount of \$500.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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DOCKET NO: 220757US0PCT



IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
FLORENCE L'ALLORET : EXAMINER: BLESSING
SERIAL NO: 10/070,910 :
FILED: MARCH 13, 2002 : GROUP ART UNIT: 1615
FOR: POLYMER COMPRISING WATER- :
SOLUBLE UNITS AND UNITS WITH AN
LCST, AND AQUEOUS COMPOSITION
COMPRISING IT

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

This brief is submitted in response to the rejection dated February 16, 2005.

REAL PARTY OF INTEREST

The real party of interest herein is L'Oréal of Paris, France.

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RELATED APPEALS AND INTERFERENCES

To the best of Appellants' knowledge, there are no other appeals or interferences which will directly affect or be directly affected by, or have a bearing on, the Board's decision in this appeal.

STATUS OF CLAIMS

Claims 26-53 are active in this application.

Claims 26-28, 30, 32-41, and 46-53 are rejected.

Claims 29, 31, and 42-45 stand withdrawn from consideration.

STATUS OF AMENDMENTS

No outstanding amendments are present in this case.

SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention as set forth in Claim 26 (Appendix I) is directed to a polymer comprising

- (1) water-soluble units bearing before reaction at least two reactive sites
- (2) LCTS units, bearing before reaction at least one reactive site, consisting of N-vinylcaprolactam homopolymers or copolymers in a proportion by weight from 5 to 70%
- (3) wherein the polymer is a block polymer comprising water-soluble blocks alternating with LCST blocks or the polymer is a graft polymer whose backbone is formed from water-soluble units and bears LCST grafts

As set forth in the specification on page 4, lines 17-22:

The aim of the present invention is to overcome the drawbacks of the prior art and to propose a novel family of polymers for controlling the rheology of aqueous compositions as a function of the temperature, while at the same time maintaining a certain level of transparency for the compositions.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The sole rejection to be reviewed on appeal is of Claims 26-28, 30, 32-44, and 46-53 under 35 U.S.C. 102(b) in view of U.S. 5,730,966 ("Torgerson").

ARGUMENT

It is well-settled law that the standard set forth in § 102(b) is that of novelty. Lack of novelty, i.e., anticipation requires strict identity between the claimed invention and that disclosed in the prior art reference. To anticipate a claim, a single prior art source must contain all of the essential limitations of the claim *Verdegaal Bros. v. Union Oil Co. of California* 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Put very simply, the claimed invention is not described by Torgerson with sufficient specificity as to constitute anticipation under U.S. patent law and therefore the rejection under 35 U.S.C. § 102(b) should be REVERSED.

In the response filed on October 4, 2004 addressing the Torgerson rejection, it was explained in great detail why Torgerson cannot anticipate the claimed invention. In particular, it was explained that the claims require water-soluble units and N-vinylcaprolactam homopolymers or copolymers as LCST units in a proportion by weight from 5 to 70% AND that the polymer is

(a) a block polymer comprising water-soluble blocks alternating with LCST blocks;

OR

(b) a graft polymer whose backbone is formed from water-soluble units and bears LCST grafts.

It was also explained that while Torgerson describes any number of possible polymers, Torgerson does not describe with sufficient specificity the polymers as claimed.

In reply to these arguments, the Office returned the following (Office Action of February 16, 2005 at pp. 2-3):

Applicant argues that Torgerson does not disclose block copolymer, but rather discloses graft copolymers. Although, claim 26 is directed to graft copolymers, applicant states that the graft copolymer of Torgerson does not describe the graft

copolymer described in lines 5-8 of page 6 of the specification/disclosure of the examined application. . .

The instant claim is directed to either a block or graft copolymer and if Torgerson discloses a graft, then the graft copolymer of Torgerson meets the claimed graft copolymer and although claims are interpreted in light of the specification, limitations from the specification are not read into the claims . . . In Torgerson, the A units are from about 40% to about 90% and the B units are from about 10% to about 60%. LCST can be the A units and list in Torgerson is not exhaustive to the extent that a skilled artisan would not be able to prepare a copolymer that has the lactam as one of the blocks.

First, the claims as well as the specification, clearly defines the boundaries of the polymer as claimed:

(a) a block polymer comprising water-soluble blocks alternating with LCST blocks;

OR

(b) a graft polymer whose backbone is formed from water-soluble units and bears LCST grafts.

Therefore, it is readily apparent that arguments were not centered on the specification but the claims itself and the basis for maintaining the rejection was not proper.

Second, the Examiner's rationale that one could have picked from any number of monomers in Torgerson and specifically, the "A" monomer that can be acrylic acid (col. 8, line 17) and a "B" monomer that can be a vinylcaprolactam (col. 10, line 25) is not tenable. The Examiner has failed to recognize that Torgerson does not describe a block polymer as claimed nor provides any direction to the graft polymer which is also an option as claimed. Therefore, on this basis as well, the rationale for maintaining the rejection was not proper.

Furthermore, as set forth in the Patent Office Manual of Patent Examining Procedure (MPEP) section 2131.02:

When the compound is not specifically named, but instead it is necessary to select portions of teachings within a reference and combine them, e.g., select various substituents from a list of

alternatives given for placement at specific sites on a generic chemical formula to arrive at a specific composition, anticipation can only be found if the classes of substituents are sufficiently limited or well delineated

Here, Torgerson simply does not describe, with sufficient specificity, the selection of vinylcaprolactam as an LCST unit and combining it with a water-soluble unit **AND** then arranging these two units as **(a)** a block polymer comprising water-soluble blocks alternating with LCST blocks; OR **(b)** a graft polymer whose backbone is formed from water-soluble units and bears LCST grafts.

Torgerson generically describes each monomer and the combinations that would result from selecting any particular monomer from each group is enormous (see cols. 2-3 and 8-9). There is simply no direction in Torgerson to select polymers that control "rheology of aqueous compositions as a function of temperature, while at the same time maintaining a certain level of transparency for the composition" as set forth in the present specification on page 4, lines 17-22.

Rather, Torgerson is concerned with selecting monomers based on different polymer properties, i.e., flexibility, elasticity, solubility, glass transition temperatures (T_g), molecular weights, and strength, which are properties useful for hair styling compositions (see col. 1, line 64 to col. 2, line 3; and col. 4, lines 54-55).

More specifically, Torgerson is concerned with preparing and utilizing graft copolymers:

The present invention relates to a water or alcohol soluble or dispersible thermoplastic elastomeric copolymer having a **backbone and two or more polymeric pendant side chains . . .** (col. 2, lines 37-39, emphasis added).

The copolymers of the present invention, can also be referred to as "**graft copolymers**" because they can be prepared from the copolymerization of monomer units and macromonomer units. *In other words, the macromonomer is "grafted" or incorporated into the copolymer.* (col. 4, lines 59-63, emphasis added).

Further, Torgerson describes the graft copolymers as:

characterized in having an elastomeric or flexible backbone and rigid, thermoplastic, hydrophilic side chains. (col. 4, lines 55-56)

The first option in Claim 26, which is defined as **a block copolymer** with alternating units of water-soluble and LCST blocks, is clearly different than the **grafted polymers** described by Torgerson. Therefore, even if one could simply pick and choose the appropriate monomers, the monomers would not be arranged as in the present claims following the description in Torgerson.

Concerning the second option in Claim 26, which is defined as a water-soluble backbone with LCST grafts, this polymer is certainly not described in Torgerson because at col. 5, line 48-62 Torgerson describes:

The copolymers of the present invention are formed from the copolymerization of randomly repeating A and B units . . . In typical embodiments of these copolymers, **the backbone is primarily derived from the ethylenically unsaturated portion of the A monomer unit and the ethylenically unsaturated portion of the B macromonomer unit. *The side chains are derived from the non-copolymerized portions of the macromonomer.***

Where is there a description for a water-soluble backbone with LCST grafts?
Certainly not here.

Further, Torgerson describes that the water-soluble monomers that impart the polymer with water-solubility, see again col. 4, lines 55-56 of Torgerson: “an elastomeric or flexible backbone and rigid, thermoplastic, hydrophilic side chains.”

In view of the above reasons alone, the rejection based on Torgerson should be Reversed.

Nonetheless, there are still further reasons why Torgerson fails to anticipate the claimed invention.

First, Torgerson describes vinyl caprolactams as a potential “A” monomer (col. 8, line 54) and also as a potential “B” monomer (col. 10, line 25) but those listings are buried amongst dozens of possible monomers. Torgerson, however, certainly provides no disclosure for specifically selecting N-vinylcaprolactam as the LCST unit in a polymer alternating with the water-soluble units; or as a graft on a water-soluble backbone as claimed.

Second, Torgerson describes that the “A” monomer can be present in an amount of 40-90% with a preferred range of 60-80% (see col. 7, lines 21-24) and the “B” monomer from 10 to 60% with a preferred range of 20 to 40% (see col. 9, lines 16-19). However, Torgerson provides no indication whatsoever to select a polymer with the above criteria AND also include N-vinylcaprolactam as the LCST units in an amount from 5 to 70% by weight in the polymer.

So amongst the broad and generic disclosure provided in Torgerson, one must first select a combination of water-soluble units and LCST units, then they must select a N-vinylcaprolactam as an LCST unit, then they must select an amount of LCST units to be within 5 to 70%, then they must choose one arrangement from (a) a block polymer comprising water-soluble blocks alternating with LCST blocks; OR (b) a graft polymer whose backbone is formed from water-soluble units and bears LCST grafts.

Putting together the various possible options provided in Torgerson would result in thousands of possible combinations and even when using the present claims as a guide, which clearly the Office has done here, none of these combinations are the claimed **block copolymer** with alternating units of water-soluble and LCST blocks. Moreover, there is nothing in Torgerson which would lead one to a graft polymer whose **backbone is formed from water-soluble units** and bears LCST grafts, which is also an option in the claims.

Torgerson must disclose a more specific, limited teaching to chose those polymers as claimed. Torgerson fails to do so and as such does not provide an anticipating disclosure to present claims.

CONCLUSION

Because the reference does not meet the very stringent requirements necessary for a reference to qualify as anticipatory under 35 U.S.C. § 102, the Examiner's rejection should be REVERSED.

Respectfully submitted,

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APPENDIX 1 (CLAIMS)

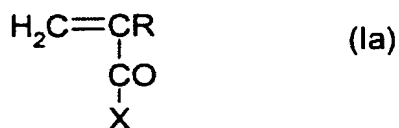
Claims 1-25 (Cancelled).

Claim 26. (Rejected) A polymer comprising water-soluble units and LCST units, said polymer being obtainable by reacting between reactive sites, first the water-soluble units bearing, before reaction, at least two reactive sites, and second the LCST units bearing, before reaction, at least one reactive site, to form a covalent bond therebetween, said LCST units consisting of N-vinylcaprolactam homopolymers or of copolymers derived therefrom, the proportion by weight of the LCST units in the polymer ranging from 5 % to 70 %, wherein the polymer is a block polymer comprising water-soluble blocks alternating with LCST blocks, or the polymer is a graft polymer whose backbone is formed from water-soluble units and bears LCST grafts, the polymer optionally being crosslinked.

Claim 27. (Rejected) The polymer according to Claim 26, in which the water-soluble units are obtained by free-radically polymerizing at least one monomer A selected from the group consisting of:

(a) (meth)acrylic acid ;

(b) vinyl monomers of formula (Ia):



wherein

R is selected from the group consisting of H, -CH₃, -C₂H₅ or -C₃H₇;

X is

(i) an alkyl oxide of the formula -OR', wherein R' is a linear or branched, saturated or unsaturated hydrocarbon-based radical containing from 1 to 6 carbons, substituted with at least one hydroxyl (-OH); primary amine (-NH₂); secondary amine (-NHR₁) or tertiary amine (-NR₁R₂) group, with R₁ and R₂, independently of each other,

representing a linear or branched, saturated or unsaturated hydrocarbon-based radical containing 1 to 25 carbon atoms, with the proviso that the sum of the carbon atoms of $R_1 + R_2$ does not exceed 26;

(ii) a halogen atom; or

(iii) the groups $-NH_2$, $-NHR'$ and $-NR'R''$ in which R' and R'' are,

independently of each other, linear or branched, saturated or unsaturated hydrocarbon-based radicals containing 1 to 25 carbon atoms, with the proviso that the total number of carbon atoms of $R' + R''$ does not exceed 26, the said R' and R'' groups optionally being substituted with a hydroxyl ($-OH$); sulphonate ($-SO_3$); sulphate ($-SO_4$); phosphate ($-PO_4H_2$); primary amine ($-NH_2$); secondary amine ($-NHR_1$), tertiary amine ($-NR_1R_2$) and/or quaternary amine ($-N^+R_1R_2R_3$) group, with R_1 , R_2 and R_3 being, independently of each other, a linear or branched, saturated or unsaturated hydrocarbon-based radical containing 1 to 25 carbon atoms, with the proviso that the sum of the carbon atoms of $R_1 + R_2$ does not exceed 26, and that the sum of the carbon atoms of $R_1 + R_2 + R_3$ does not exceed 27;

(c) maleic anhydride;

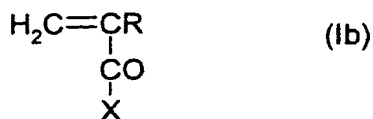
(d) itaconic acid;

(e) vinyl alcohol of the formula $CH_2=CHOH$; and

(f) vinyl acetate of the formula $CH_2=CH-OCOCH_3$.

Claim 28. (Rejected) The polymer according to Claim 27, wherein the water-soluble units are obtained by polymerization of at least one monomer B selected from the group consisting of:

(a) vinyl monomers of formula (Ib) below:



wherein R is selected from the group consisting of H, -CH₃, -C₂H₅ and -C₃H₇;

and

X is an alkyl oxide of the formula -OR', wherein R' is a linear or branched, saturated or unsaturated hydrocarbon-based radical containing from 1 to 6 carbons, optionally substituted with one or more of sulphonate (-SO₃⁻), sulphate (-SO₄⁻), phosphate (-PO₄H₂); and quaternary amine (-N⁺R₁R₂R₃) group, with R₁, R₂ and R₃ being, independently of each other, a linear or branched, saturated or unsaturated hydrocarbon-based radical containing 1 to 25 carbon atoms, with the proviso that the sum of the carbon atoms of R₁ + R₂ + R₃ does not exceed 27;

(b) N-vinyl lactams;

(c) vinyl ethers of the formula CH₂=CHOR in which R is a linear or branched, saturated or unsaturated hydrocarbon-based radical containing from 1 to 25 carbons;

(d) styrene and its derivatives;

(e) dimethyldiallylammonium chloride; and

(f) vinylacetamide.

Claim 29. (Withdrawn) The polymer according to Claim 26, wherein the water-soluble units are selected from the group consisting of:

(a) water-soluble polyurethanes having, before reaction, at least two reactive sites;

(b) xanthan gum;

(c) alginates and derivatives thereof;

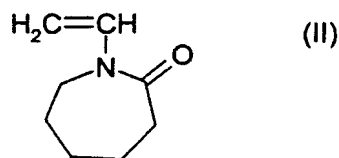
(d) cellulose derivatives;

(e) galactomanans and derivatives thereof; and

(f) polyethyleneimine.

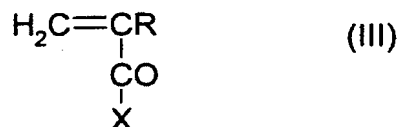
Claim 30. (Rejected) The polymer according to Claim 26, wherein the water-soluble units have a molar weight ranging from 5 000 g/mol to 5 000 000 g/mol when the water-soluble units constitute the water-soluble backbone of a graft polymer; or a molar weight ranging from 5 000 g/mol to 100 000 g/mol when the water-soluble units constitute a block of a multiblock polymer.

Claim 31. (Withdrawn) The polymer according to Claim 26, wherein the LCST units are N-vinylcaprolactam homopolymers of formula (II):



or copolymers of N-vinylcaprolactam and a monomer selected from the group consisting of:

(a) a vinyl monomer of formula (III):



wherein

R is selected from the group consisting of H, -CH₃, -C₂H₅ and -C₃H₇ ; and

X is selected from the group consisting of:

(i) an alkyl oxide of the formula -OR', wherein R' is a linear or branched, saturated or unsaturated hydrocarbon-based radical containing from 1 to 6 carbons, optionally substituted with at least one halogen atom; a sulfonate(-SO₃⁻), sulphate (-SO₄⁻), phosphate (-PO₄H₂); hydroxyl (-OH); primary amine (-NH₂); secondary amine (-NHR₁), tertiary amine

(-NR₁R₂) or quaternary amine (-N⁺R₁R₂R₃) group with R₁, R₂ and R₃ being, independently of each other, a linear or branched, saturated or unsaturated hydrocarbon-based radical containing 1 to 6 carbon atoms, with the proviso that the sum of the carbon atoms of R' + R₁ + R₂ + R₃ does not exceed 7; and

(ii) groups -NH₂, -NHR' and -NR'R'' in which R' and R'' are, independently of each other, linear or branched, saturated or unsaturated hydrocarbon-based radicals containing 1 to 6 carbon atoms, with the proviso that the total number of carbon atoms of R' + R'' does not exceed 7, the said R' and R'' optionally being substituted with a halogen atom; a hydroxyl (-OH); sulphonate (-SO₃⁻), sulphate (-SO₄⁻); phosphate (-PO₄H₂); primary amine (-NH₂); secondary amine (-NHR₁), tertiary amine (-NR₁R₂) and/or quaternary amine (-N⁺R₁R₂R₃) group with R₁, R₂ and R₃ being, independently of each other, a linear or branched, saturated or unsaturated hydrocarbon-based radical containing 1 to 6 carbon atoms, with the proviso that the sum of the carbon atoms of R' + R'' + R₁ + R₂ + R₃ does not exceed 7;

(b) maleic anhydride;

(c) itaconic acid;

(d) vinyl alcohol of the formula CH₂=CHOH; vinyl acetate of the formula CH₂=CH-OCOCH₃;

(e) a vinyl ether of the formula CH₂=CHOR in which R is a linear or branched, saturated or unsaturated hydrocarbon-based radical containing from 1 to 6 carbons; styrene or derivatives thereof;

(f) dimethyldiallylammonium chloride; and

(g) vinylacetamide.

Claim 32. (Rejected) The polymer according to Claim 26, wherein the molar weight of the LCST units ranges from 1 000 to 500 000 g/mol.

Claim 33. (Rejected) The polymer according to Claim 26, wherein the LCST units are in the form of N-vinylcaprolactam homopolymers or amino derivative copolymers.

Claim 34. (Rejected) The polymer according to Claim 26, wherein the proportion by weight of the LCST units in the final polymer ranges from 20 % to 65 % by weight relative to the final polymer.

Claim 35. (Rejected) The polymer according to Claim 26, wherein the heat-induced demixing temperature of the LCST units ranges from 5° C to 40° C, for a concentration by weight in water of 1 % by weight of said LCST units.

Claim 36. (Rejected) The polymer according to Claim 26, having a solubility in water, at 20°C, of at least 10 g/l.

Claim 37. (Rejected) A thickened, or gelled, transparent aqueous composition having a maximum light transmittance value, irrespective of the wavelength ranging from 400 to 800 nm, through a sample 1 cm thick, of at least 80 % prepared from the polymer of Claim 26.

Claim 38. (Rejected) An aqueous composition comprising at least one polymer according to Claim 26, and an aqueous phase.

Claim 39. (Rejected) The composition according to Claim 38, wherein the polymer is present in an amount ranging from 0.01 % to 20 % by weight.

Claim 40. (Rejected) The composition according to Claim 38, comprising a cosmetically or dermatologically acceptable medium.

Claim 41. (Rejected) A cosmetic for making up and/or caring for keratin materials comprising the aqueous composition of Claim 38.

Claim 42. (Withdrawn) The polymer according to Claim 29, wherein the water-soluble units are water-soluble polyurethanes and which bear carboxylic acid functional groups.

Claim 43 (Withdrawn) The polymer according to Claim 29, wherein the water-soluble units are alginate derivatives which is propylene glycol alginate.

Claim 44 (Withdrawn) The polymer according to Claim 29, wherein the water-soluble units are cellulose derivatives which are one or more of carboxymethylcellulose, hydroxypropylcellulose, hydroxyethylcellulose and quaternized hydroxyethylcellulose.

Claim 45 (Withdrawn) The polymer according to Claim 29, wherein the water-soluble units are galactomanan derivatives, which are one or more of Konjac gum, guar gum, hydroxypropylguar, hydroxypropylguar modified with sodium methylcarboxylate groups and hydroxypropyltrimethylammonium guar chloride.

Claim 46. (Rejected) The polymer according to Claim 33, wherein the units with an LCST are in the form of amino derivative copolymers and are one or more of a monoamino derivative copolymer, a diamino derivative copolymer, and a triamino derivative copolymer.

Claim 47. (Rejected) The polymer according to Claim 34, wherein the proportion by weight of the LCST units in the final polymer ranges from 30 % to 60 % by weight relative to the final polymer.

Claim 48. (Rejected) The polymer according to Claim 35, in which the heat-induced demixing temperature of the LCST units ranges from 10°C and 35°C, for a concentration by weight in water of 1 % by weight of the said LCST units.

Claim 49. (Rejected) The polymer according to Claim 36, having a solubility in water, at 20°C, of at least 20 g/l.

Claim 50. (Rejected) The polymer according to Claim 26, wherein the polymer is comprised of acrylic acid units as water-soluble monomer units and N-vinylcaprolactam as LCST units.

Claim 51. (Rejected) The thickened transparent aqueous composition according to Claim 37, which has a maximum light transmittance value of at least 85 %.

Claim 52. (Rejected) The composition according to Claim 38, in which the polymer is present in an amount ranging from 0.05 % to 15 % by weight.

Claim 53 (Rejected) The composition according to Claim 26, wherein the polymer is a linear polymer.

Application No. 10/070,910
Appeal Brief

APPENDIX II (EVIDENCE)

None